What is claimed is:

1. A displacement correction apparatus comprising:

a curvature information storage unit configured to store curvature information of a reticle;

a displacement information calculation unit configured to calculate displacement generated in the reticle being fixed on a reticle stage of an exposure apparatus based on the curvature information; and

a correction information calculation unit configured to calculate correction information for correcting a projection lens of the exposure apparatus based on the displacement.

2. The displacement correction apparatus of claim 1, wherein the curvature information storage unit stores first height measured between a surface of the reticle and a first reference plane set for the reticle and a position coordinate on a surface of the reticle at which the first height is measured, as the curvature information.

3. The displacement correction apparatus of claim 1, further comprising:

a curvature information measurement device configured to measure the curvature information; and

a curvature information measurement control module configured to control the curvature information measurement device to measure the curvature information.

4. The displacement correction apparatus of claim 1, wherein the displacement information calculating unit comprises:

a first insertion module configured to insert coefficientss into a curved surface approximating polynomial of the reticle based on the curvature information; and

a first displacement information calculation module configured to calculate the displacement generated in the reticle being flattened based on the curved surface approximating polynomial of the reticle.

5. The displacement correction apparatus of claim 1, wherein the correction information calculation unit comprises:

a coefficient calculation module configured to calculate a coefficient of a displacement correction polynomial for correcting a projection lens of the exposure apparatus based on the displacement; and,

a correction information calculation module configured to calculate the correction information based on the coefficient of the displacement correction polynomial.

6. The displacement correction apparatus of claim 2, further comprising a flatness information storage unit configured to store flatness information of the reticle stage,

wherein the displacement information calculation unit calculates the displacement by considering flatness of the reticle stage based on the curvature information and the flatness information.

7. The displacement correction apparatus of claim 6, wherein the displacement information calculation unit comprises:

a height calculation module configured to calculate a third height,

subtracting a second height measured between a surface of the reticle stage and a second reference plane set for the reticle stage from the first height,

a second insertion module configured to insert coefficients into a curved surface approximating polynomial of the reticle by considering the flatness of the reticle stage, using the third height and a position coordinate on the surface of the reticle stage at which the first and second heights are measured; and,

a second displacement information calculation module configured to calculate the displacement generated in a changed shape of the reticle when adhered to the reticle stage, using a curved surface approximating polynomial of the reticle taken the flatness of the reticle stage into consideration.

8. An exposure system comprising,

an exposure apparatus, and

a displacement correction apparatus including: a curvature information storage unit configured to store curvature information of a reticle; a displacement information calculation unit configured to calculate displacement generated in the reticle being fixed on a reticle stage of an exposure apparatus based on the curvature information; and a correction information calculation unit configured to calculate correction information for correcting a projection lens of the exposure apparatus based on the displacement.

9. The exposure system of claim 8, wherein the displacement correction apparatus further comprises:

a curvature information measurement device configured to measure the curvature information; and

a curvature information measurement control module configured to control the curvature information measurement device to measure the curvature information.

10. The exposure system of claim 8, wherein the curvature information storage unit stores information of first height measured between a surface of the reticle and a first reference plane and a position coordinate on a surface of the reticle at which the first height is measured, as the curvature information.

11. The exposure system of claim 8, wherein the displacement information calculation unit comprises:

a first insertion module configured to insert coefficients into a curved surface approximating polynomial of the reticle based on the curvature information; and

a first displacement information calculation module configured to calculate the displacement generated in the reticle being flattened based on the curved surface approximating polynomial of the reticle.

12. The exposure system of claim 8, wherein the correction information calculation unit comprises:

a coefficient calculation module configured to calculate coefficients of a displacement correction polynomial for correcting a projection lens of the exposure apparatus based on the displacement; and,

a correction information calculation module configured to calculate the correction information based on the coefficients of the displacement correction polynomial.

13. The exposure system of claim 10, further comprising a flatness information storage unit configured to store flatness information of the reticle stage,

wherein the displacement information calculation unit calculates the displacement by considering flatness of the reticle stage based on the curvature information and the flatness information.

14. The exposure system of claim 13, wherein the displacement information calculation unit comprises:

a height calculation module configured to calculate a third height, subtracting a second height measured between a surface of the reticle stage and a second reference plane set for the reticle stage from the first height,

a second insertion module configured to insert coefficients into a curved surface approximating polynomial of the reticle by considering the flatness of the reticle stage, using the third height and a position coordinate on the surface of the reticle stage at which the first and second heights are measured; and,

a second displacement information calculation module configured to calculate the displacement generated in a changed shape of the reticle when adhered to the reticle stage, using a curved surface approximating polynomial of the reticle taken the flatness of the reticle stage into consideration.

15. An exposure method comprising:

measuring curvature information of a reticle;

calculating a displacement generated in the reticle being fixed on a reticle stage of an exposure apparatus, using the curvature information;

calculating correction information for correcting projection lens of the exposure apparatus, using the displacement;

correcting the projection lens by using the correction information; and

exposing the reticle fixed on the reticle stage to a wafer, using the projection lens corrected.

16. The exposure method of claim 15, wherein the measuring the curvature information comprises measuring a first height between a surface of the reticle and a first reference plane set for the reticle and a position coordinate on a surface of the reticle at which the first height is measured, as the curvature information.

17. The exposure method of claim 15, wherein the calculating the displacement comprises;

inserting coefficients into a curved surface approximating polynomial of the reticle based on the curvature information; and

calculating the displacement generated in the reticle being flattened based on the curved surface approximating polynomial of the reticle.

18. The exposure method of claim 16, further comprising measuring flatness information of the reticle stage, and

wherein calculating the displacement comprises calculating the displacement taking flatness of the reticle stage into consideration, using the curvature information and the flatness information.

19. The exposure method of claim 18, wherein calculating the displacement comprising,

calculating a third height, subtracting a second height measured from a surface of the reticle stage and a second reference plane set for the reticle stage from the first height,

inserting coefficients into a curved surface approximating polynomial of the reticle by considering the flatness of the reticle stage, using the third height and a position coordinate on the surface of the reticle stage measured at which the first and second heights are measured; and,

calculating the displacement generated in a changed shape of the reticle when adhered to the reticle stage, using a curved surface approximating polynomial of the reticle taken the flatness of the reticle stage into consideration.

20. A computer program product for executing an application on a displacement correction apparatus, the computer program product comprising:

instructions for reading curvature information of a reticle from a curvature information storage unit;

instructions for calculating displacement generated in the reticle

being fixed on a reticle stage of an exposure apparatus, based on the curvature information;

instructions for calculating correction information for correcting a projection lens of the exposure apparatus, using the displacement; and

instructions for storing the correction information in a correction information storage unit.